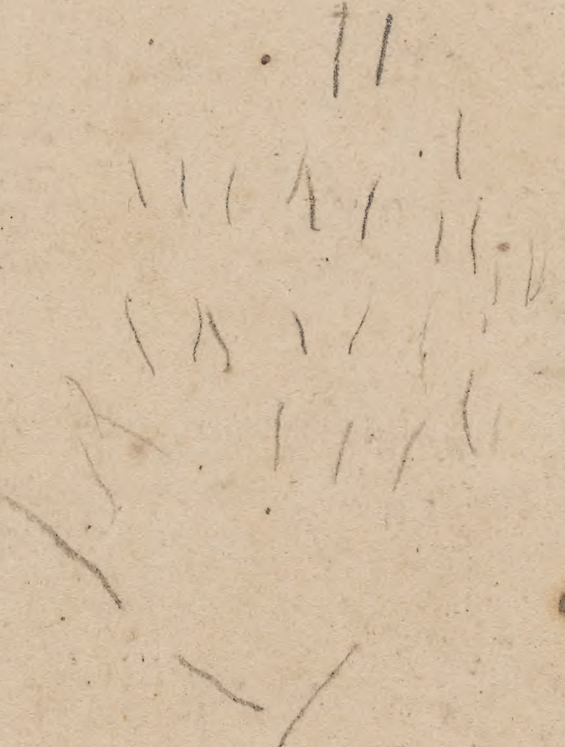
Meek.

F Meek

1848

My Drawing of Fort Snelling
represents it as seen from the
opposite side of the St Peters
facing the East South East
Morning 31st May 1848



1
2
3 Voyageurs
4
5
6
7
8 Specimen No 1. at Keokuck
No1 Orthis Crenistria

the Large Coral seen near
the Cave in Rock and some of that
large coral from E. Tennessee
and some of the Presented by J.W
Watkins is Lithostrotion

Trader at St. Pauls – Jackson –
Brags of having recently made a
Sale to the Indians of whiskey
by which he sold for furs (equal
in value to 1200) 25$ worth
of whiskey

Bark canoes constructed of
whaling ribs & longitudinal Slats
made of white cedar (cupressus ~~thyoid~~ thyoides
covering Paper birch (Betula papyracea
stitched & sewed Tamarack - Larix flexilis

Seams pitched

Indian Names of Rivers &c
Chippeway
St. Peters - Ashkibogi-sibi (green leaf River)

Sioux.

Mini-sotah - St Peters

Mankato - Blue earth River

Ndacotah - (Sioux) united people)

Wasaisha - vermillion River

Inyan-sha-sha-wapta (Red stone River)

Tewapa Tonkaon - Lake where the big leaves grow

Dr. Litton

Dr. D. D. Owen Principal.

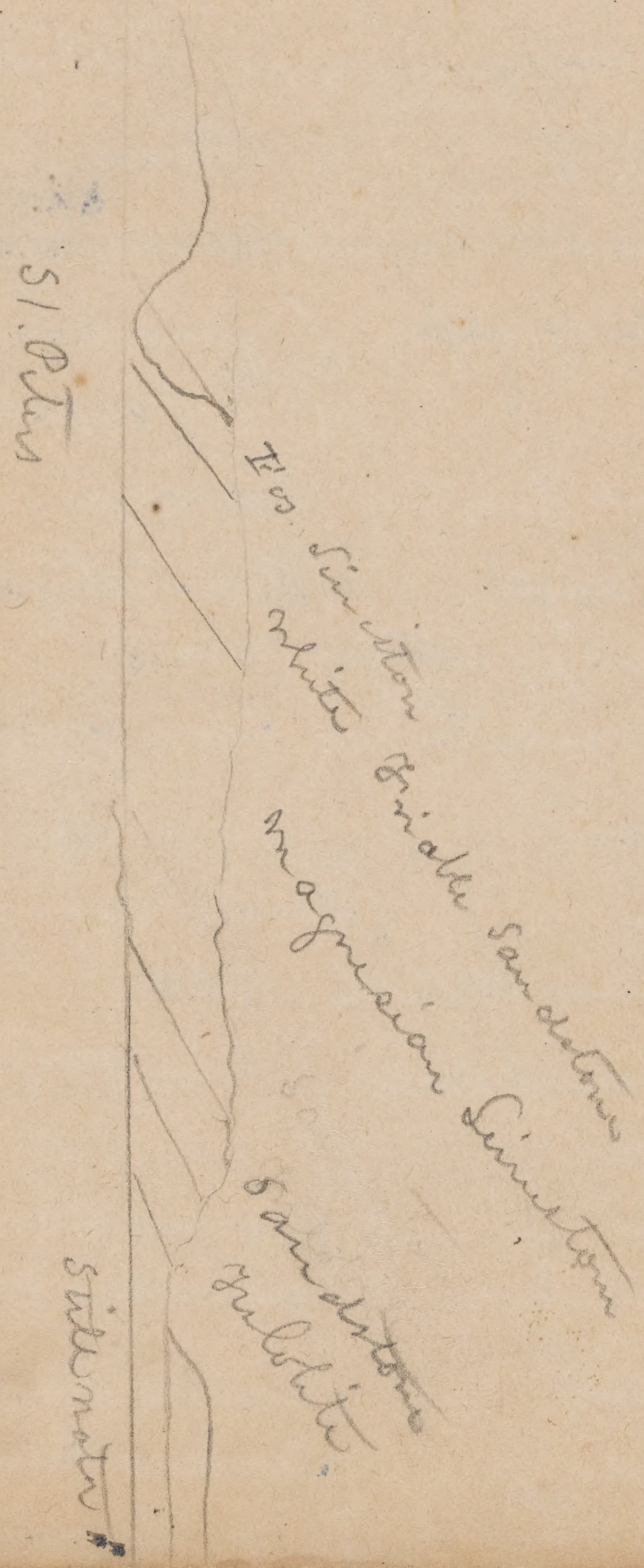
Dr Norwood " Assistant
Mr Pratten
Evans Secy
Col. Charles Whittlesey Astronom
Dr. B. F. Shumard Louisville

Mr Robt B. Hagins assist

A. Randall - [illegible]
John Bartlett (Boston) " assist

B. C. Macy - N. Harmony
J. B. Meek ast (Owensboro)

Mr. Chas Parry Botanist - Davenport



List of birds seen or heard on the St. Peters

Short Winged Buzzard	(Falco)
Swallow Tailed Hawk	(" Furcatus)
Perigrine Falcon	(")
(Mergus merganser) or shell drake	
a Tern	(Sterna)
Yellow headed Troupial	(Icterus ~~[illegible]~~ Icterocephala)
Blk & white warbler	(sylvia varia)
Canada "	(" pardalina)
Blk. Throat Bunting	(Emberiza americanus)
Golden Eagle	(Falco chrysaetas)
White Eyed fly catcher	(vireo)
(Sterna minuta) or silvery tern)	
2 Sparrows	
Raven	(Corvus Corax)
Red Tailed Hawk	(Falco
Great Horned Owl	(strix virginiana)
Barred owl	(")
Crow — — —	(Corvus Corone)
Crow Blk Bird	(quiscalus versecala
Jay (Blue)	(Corvus Cristatus
Cat Bird	(Turdus Felivox)
Brown Thrush	(" Ferruginous

Robin.	(Turdus Migratorius
Rail	(Ralus —)
spotted Tattler	(Totanus
Bartrams Tattler	(" Bartonias)
Curlew —	(Numenius
Gull —	(Larus
Great Heron	(Ardea Herodias
Olive Flycatcher	(Muscicapa
Red eyed "	(Vireo Olivaceous
Prairie Hen	(Tetrao Cupido
Phiasant —	(" " Umbellus
Gold finch	(Fringilla
Summer Duck	(Anas Sponsa
Blue wing Teal	(Anas Discors
Hermit Thrush	(Turdus
whip poor-will	(Caprimulgus Vociferus
Turkey Buzzard	(Cathartes Aura
Bald Eagle —	(Falco
Phoebe	(Muscicapa
wood Thrush	(Turdus
scarlet Tanger	(Tanagra Rubra
Canada goos	(Anser
Bank swallow	(Hirunda Riparia
Cliff "	("

Memoranda

Left Home Friday April 6th 1848 arrived at Evansville 12 M. Oclock same day; and left there immediately on the wabash steamer Richmond for New Harmony. arrived there on saturday morning the 7th inst.

Remained at New Harmony till the 2d May, when the whole corps started for Mount Vernon at 8. Oclk A.M. and arrived there at 1. oclock P.M. the same day. left this evening at 7½ oclk on S.B. Northern Light for St Louis

whilst at Mt Vernon examined an ancient alluvial deposit seen along the River bank which is also to be seen in the hills back of New Harmony; saw in the following shells — 3 species of

Valvata. 3. do of Limnea - Paludina Subpurpurea - 3 sp. Planorbis - Succinea - Physa - Helix - Pupa Armifera - and Cyclas - (See Lyells El)

arrived at St Louis 11. Oclk P.M. Thursday the 4th May, stayed till morning on board the boat. Scotts Hotel. Saw in the rocks above Steamboat Landing - Atrypa Lingulata - Productus - Cyathophillum an undetermined species Catapora - found tooth of a new species fish - also a tolerably good encrinite head

May 11th 5½ P.M. we have just started from the Wharf at St. Louis on board the S.B. Senator. we remained here so long in order to take passage on a boat bound the head of S.B. Navigation

passed mouth of the Missouri at 10 Oclock P.M.

Friday May 12th beautiful clear morning. pretty scenery on the East side of the river. bluffs about 30 to 80 feet high Mt. Limestone with remains of the Sandstone of the coal formation on top.

Saturday May 13th morning clear and pleasant. 7½ Oclock A.M. just arrived at Keokuk, at the foot of the rapids on the Missouri side. town situated on a bluff of Mt. Limestone. Saw Here a large Orthis - two species Pentremites - Cyathophillum - Millipora - and part of the Post abdomen of a trilobite like the Calamine Blumenbachii.

Only 2 ft. 3 inches water on the upper part of the rapids. broke our wheel

against a rock. cast anchor
to mend it.— Hills on each side of the
20 to
River about 80 feet high. face of the
Country varyed with hills & valleys—
picturesque. 3. wharf boats at Keokuk
Mr A. Randall and Mr John Bartlett
his assistant left at the mouth of the
river Des Moines this morning. He is
ascend that river and cross over to the
Lower Valve at Keokuk
St. Peters. Specimen No 1. Orthis Crenistria

Landed at Nauvoo at 12 o'clk
M. went out in a hack to see the
Temple. went all through it and
out on the top. country round
gently undulating — view from
the top of the temple splendid.
beautiful piece of architecture —
built of compact limestone. inscri-

=bed in golden letters on the
front

The house of the Lord
built by
The church of Jesus Christ
of Latter day saints.
commenced Ap. 6th 1841.
Holiness to the Lord.

The city and the country
round based upon Carb. or Mt. Limestone
found here among the chippings
of the stone of which the Temple is
built my Specimen No 2. Terebratula
Cummellosa and at the landing
No 3 Do— Do No 4 Productus

No 5. Spirifera striata

saw boulder of green stone near
the landing

3. O'clk P.M. at

saw many large boulders of greenstone trap along the margin of the river near the landing

8½ O'Clock P.M. at Burlington Iowa

Sunday May 14th 8. Oclk A.M. at Bloomington Iowa. Neat pretty little town situated on an elevation. based on sandstone of the coal formation. saw in sandstone at the wharf impressions of Palms and Lepidodendra Coal mines 2 miles from here on the Illinois side.

12. O'clock at Davenport and Rock Island. the first on the West & the latter on the E. side of the river. Greenstone granites & amygdaloid trap boulders strewed along the shore. The most beautiful country along here I ever saw. the eye wanders with delight over a boundless expanse of cultivated ground interspersed with groves of timber and varied with orchard farm houses &c scattered over gentle slopes varying from 20 to 70 feet in height above the level of the River. this is also the appearance of the face of the country generally between this and Nauvoo and down to Keokuk. coal found a few miles below this on both sides of the river. the coal formation is overlayed here by a white lime stone which does not seem to be the mountain limestone I saw no fossils in it. Mr. Parry the botanist joined us here.

The rocks here a mountain lime (astrea rugosa found in it) stone. there is a large Island called Rock Island here. the town on the east side of the river takes its name from it; and the Island is so called from the fact of its being based upon the mountain limestone which crops out boldly along its banks. at the lower end of the Island there is bold bluff of rock on which are still to be seen the remains of Old fort Armstrong where old Genl. Taylor had two hard battles with the Indians the Mt Limestone is very thin here and probably runs out or alternates with the Magnesian Limestone somewhere nearer

here. I noticed that at the landing at Nauvoo and above there it is very cherty at that place and resembles the rocks at the muscle shoals on the Tennessee river. this chert is the cause of the shoals between here and Keokuk

Dr Owen considers the Magnesian Limestone along above here the equivalent of the lower Silurian rocks

arrived at New Albany, on the Illinois side, at sun set, based upon a soft buff magnesian Limestone which is supposed to be the eq. of the cliff Limestone at Madison & underlays the white Mount Limestone seen at Davenport. there is a greater southern dip here and also for a long distance North of this

Saw in it many internal casts
of encrinite heads and stems.
also several large orthoceratites
my encrinite Head No 6. is
from here. The view of the
boundless rolling prairie to the
west, on the opposite side of
the river is beautiful beyond
description. - One encrinite casts
proved to be the Hypothocrinite
Decoris.

Monday May 13th arrived
at Galena 6. miles up the Fever River
at 8. O clock A.M. Fever river is a
small pretty stream from 60 to 100 yd
wide. hills of Magn. Limestone on
of Fever River
each side and for some distance below
on the Mississippi 50 to 280 feet high

Galena is built on both sides of the
river right in the hills sides; there being
little or no bottom. streets run
along on terraces. its situation is
very similar to that of Frankfort Ky. but
it is much more closely crowded in between
the hills. contains many good houses
and looks like a business place.
I went up to the quarries of Magn-
Limestone immediately behind the
town on the west side of the River.
near the top of the bluff I found my
see Dr Owen rep. 97
specimens of coral Coscinipora
(in my trunk)
little Pleurotomaria — No 7.
an my Large shell No. 8.

I also saw several large
Orthoceratites. left Galena at
1. O clk P.M. Dr Owen & Mr Evans

went over by land to the land office at Dubuque. we arrived at Dubuque at 4 oclock P.M. hills cliff magnesian limestone here 150 to 300 feet high. River wide — several Islands

Tuesday May 16th arrived at Prairie Du Chien at 6 OclK A.M it is a small town situated on the E. Side of the river, on a bottom sandy prairie 2 M wide. back of the town the hills of upper lower Cliff mag Limestone rise with smooth rounded outlines to the height of about 400 feet which seems to be the common level of the country after leaving the river bottom. the hills back of the town have only a few scattering trees; further back is a vast Prairie. morning clear and cool. beautiful scenery on the west side of the river above Prairie du chien. there is something about these cliffs of magn Limestone which imparts a more pleasing effect to the scenery than any other rock I know of. whether it is its peculiar manner of weathering or the many hues seen on its surface I am unable to say; but I am certain that no other scenery I have ever seen has so fine an effect. the rock pre various hues of grey buff and bright ochre yellow

9. oclock the river widens out and is very full of some small Islands we are just now lost amongst the

numerous Islands. I can see in the distance, on each side over the tops of the trees on the Islands hills of mag Limestone 200 to 400 feet high. this great valley 2 to 6 miles between has been excavated by the mighty Mississippi. we broke our wheel and stopped at one of the Islands to mend it. saw growing on this Island Ulmus Americana. several species Fraxinus (ash) several species maple among others saw the Acer dasycarpum — Salix. several sp. — also saw many species smilax ~~and vines~~ — found the pretty little rush Equisetum Limosum large Populus Laevigata — a few dwarf birch, Betula Glandulosa

some where near the mouth of the Wisconsin river the sandstone that underlays the Cliff magnesian Limestone begins to show itself and owing to the southern dip of the rocks mounts higher and higher as we ascend the river until near the mouth of Bad axe river it forms nearly the whole of the Cliffs. the water of the river along here and for a long distance below is clear and about the colour of weak coffee.

river all along here very wide and full of low Islands 1 to 3 feet above the at the present stage, but often inundated. see no living thing on these sand a few small birds of passage and occasionally a tall gaunt looking crane

12 o'clk m just saw two squaws paddling along shore on the W. side in

a canoe. these are the first of the children of the forest we have seen. they are of the Winnebago tribe. have seen no dwellings of whites since we left Prairie Du Chien except occasionally the huts of some adventurous hunter, and even these have not been seen for several miles back. growth of the country from Davenport up generally small and scattering with occasional prairies. saw some indian graves on the bank of the river they were protected by log pens and had a small white flag waving over them

5 Oclock P.M. stopped to take in wood at the foot of high bluff on the west side of the river about 6 miles above the mouth of Bad Axe river. wood yard kept by a half starved looking half breed. bluff here about half the way up sand stone capped with the cliff Magn Limestone. It is altogether about 400 feet high which is the common level of the country. the valley is here near three miles wide. the river spreads all over it and is divided by many islands I went up to the top of the hill when I had a fine view of the valley. saw in flower here the white Ladies slipper - Cypripedium Canadensis

wild Columbine - Aquilegia Canadensis - Geranium Pusillum - Louse wort, Pedicularis Canadensis (the plant at the head of Floras ravine that [illegible] I. Grisson and me so much belongs to the latter Genus, and if I am not mistaken to this species) Bell wort, Uvularia Perfoliata and the Summit of the hill as far back as I went was thickly set with a species of wild Strawberry - Fragaria Virginiana. Trees small and very scattering. hills in many places perfectly destitute of Trees or shrubs.

Arrived at Prairie A Lacrosse at dusk. only some 4 or 5 dwelling houses a Store ware house &c Saw a few Indians moving about in the moon light, wrapped in their blankets, looking like ghosts

Wednesday May 17th 8. O'clk A.M. fine clear morning. we are just entering Lake Pepin. hills seen on each side in the distance more wooded and show fewer cliffs than those seen yesterday. they are nearly bare of timber and carpeted with a beautiful sword of green grass. Landed here at trading post on E. side or town consisting of two or three doz houses dignified by the name of Buttsville saw written with a coal on the side of one of the houses Buttsville Hotel. stopped a short time here and saw in flower

Ranunculus repens. in a point the R. Lacustris. also saw here the first hemlocks. Pinus Canadensis. this place is a low bottom on the E side of the river just at the commencement of L. Pepin. high hill seen on each side in the distance

10. OClock A.M. we are now 4 or 5 miles up the Lake, which is 3 to 5 miles wide weather calm and pleasant:- not a breeze + the slightest ripple on the surface of the water. Lake bounded by hills of Sandstone capped with 100 ft of magnesian Limestone, altogether from 100 to 500 feet high - some places covered with small trees, but generally barren of timber and set with a beautiful sward of green grass. as seen in the distance the face of the country although in a perfect state of nature looks like a highly cultivated country. the prairies look like pastures & meadows and the clumps of small trees like orchards, while the occasional naked rocks may be easily mistaken for farm houses scattered along the base of the hills and ~~or strewn~~ on the gentle slopes. we have just passed what is called the Lovers leap. a bold cliff about 500 feet above the water on the E. side Dr Litton informs me that these hills and cliffs abound in rattle snakes, - that they killed a number of them whilst investigating this region of country last year.

12. OClock M. at the Island

toward the head of the lake, pass through a slough to the left of the Island. here we saw the village of a small band of Sioux Indians numbering about thirty lodges with a house for the agent. the cabins in which they live during the winter season are at the foot of high bluff on the left hand side as you go up; but the whole band are at this time on the Island in a grove, with their Skin Summer Camps. as we passed they made many gesticulations and set up a tremendous jabbering the meaning of which I could not tell. I noticed one little boy snatch up his miniature bow and arrow and drew it in a threatening attitude as though he were going to shoot the boat. thus manifesting his hostile feelings toward us, as I supposed.

5 O'clock P.M. just entered Lake St. Croix. owing to a displacement or change of dip the Mag. Limestone is here down at the waters edge. up toward the upper end of the lake it is again seen on the tops of the hills with sandstone under it. Pines Cedars and a white barked species of Populus now begin to be the characteristic trees. but hills are generally naked. the drift composed of sand and granite seen all along the lake some distance below Stillwater,

varying in height from 50 to 100 feet above the Lake. Granite and Trap boulders thickly Strewed along the Shore. arrived at Still water 6. Oclock P.M. it is a thriving little village at the head of St. Croix Lake. houses all new and tastefully built of wood. Hotel at this place destroyed by fire so we had to get Lodgings at private houses which we succeeded in doing with great difficulty bluff back of the town about 150 feet high sandstone seen at the base mag. Limestone from there up, high hills of Drift on the opposite Side of the river. Shore Strewed with boulders of granite Amygdaloid, porphyry, green Stone &c

business of inhabitants is the pine lumber trade. Specimens collected here Amygdaloid Trap. Gneiss. Calcareous Tufa, porphyry &c with recent Shells of the genus Planorbis. saw growing here the skunk cabbage (Ictodes foetidus) large fern (Osmunda Interrupta). Birch. Betula (papyracea) Red Elder (Sambucus Pubescens) a beautiful little Avens. (Geum Radiatum?) green snake robin (Arum Dracontium).

Mr Mayo & Dr Shumard are gone over to St Peters to hire voyageurs canoes &c

Thursday May 18th spent the day in writing home & packing up the clothing and other articles we are to take with us

Friday May 19th went up to the Trilobite bed above the town and collected several pieces of large ~~pieces~~ of Trilobites. a few Lingulas. and some very pretty Crystals sulphuret of zinc.

I was informed by an intelligent lumber dealer that there is annually from three to five million feet of sawed pine lumber annually rafted from the St. Croix; and as much if not more in logs.

Mr Macy Dr Owen & Dr Shumard just returned from St. Peters

Saturday May 20th Pitched our tent — spent the day in dividing off to each sub corps its compliment of Provision

Sunday May 21. last night ~~wich~~ was the first night I slept in our tent — slept soundly. found today that beautiful little fern Asplenium Rhyzophyllum; the first time I ever saw it

Linnnia

collected specimens of small linnaia in the spring branch near the Camp. took a specimen from from a large boulder near the camp which would weigh near 3 Ton. Hypersthene composed of Labrador felspar. saw today for the first time a species of wild honeysuckle (Lonicera Sempervirens). Likewise the Painted cup (Euchroma coccinea) walked out to a little lake about 1 mile back in the Prairie and saw in bloom at the margin of the lake the remarkable plant (Sarracenia Heterophylla) or side-saddle plant, false pitcher plant — Alnus Glutinosa — Andromeda polyfolia A. Calyculata — A very small species of Salix — Menyanthus Trifoliata —, on the prairie the wild Straw Berry. Fragaria Virginiana 5. species Viola — Geranium Maculatum — a pretty little white species of Utricularia and the common yellow Ladies slipper Cypripedium Pubescens, all in flower.

notice this * Lateralis say

the shores of the lake lined with millions of shells of the genus Planorbis annulatus. Prairie as far back as we went composed of drift = sand gravel and boulders. Lake full of large leeches Hirudo lateralis*. ((the Sandstone that underlays the mag= limestone; at this place is, by measurement, 70 feet above the lake.))

Monday 22d 8 oclk A.M. Cloudy slight showers wind 4. to N.W. Saw today in flower the small wild cherry Prunus serotina. our voyageurs Baptiste and both half breeds came over from St. Peters this evening left at sunset. we expect to start some to St. Peters tomorrow at noon.

Tuesday May 23. wind from the S. E. force 2. from daylight till 1 Oclock P.M., with a continued rain. thermometer 57° F. at 2 oclk P.M. wind changed from S.E. to E.S.E stopped rain but still cloudy.

2 O.clock wind chd to ~~[illegible]~~ W. N. W. force 6. rained all the evening therm. sunk to 50° at sun set 46°. out and 49 inside the camp.

Wednesday May 24th the sun rose clear but it soon clouded up wind course W. N. W force 5. therm inside 51° out 48° wind same force course till night. Dr Shumard and I collected 3 species of small living Helices this morning

Thursday May 25. wind 6. 2. ther 40° in tent at sun rise. slight frost this morning. Dr Shumard, Dr Owen, Dr Litton & Dr Norwood with Mr Pratton & Mr Harris started at 7 oclock this morning on board the S. B. St Franklin for St Peters. Our corps embarked for the same place in our canoes at 8½ Oclock about 10 miles below Stillwater, Mr Macy, Dr Parry & myself got out and walked across a little Prairie in a bend of the river, on the W. side, it was about 4 M. across, and carpeted with a beautiful green sward of grass, and flows some places the whole surface was a complete bed of violets, (Viola Pedata I also saw in flower a beautiful species of (Euchroma Coccinea) also spiderwort (Tradescantia virginica) sorrel Oxalis violacea with large natural beds of wild strawberry (Fragaria virginiana) Prairie drift-sand & gravel, a short distance back in higher bluffs the Magr Lime Stone was seen, — near the mouth Kinnikinick the Magn Limestone was seen as low down as at the wat edge. arrived at the mouth of the St. Croix at 5. o.clk P.M. — Camped on the tongue of land betw the two Rivers — had a slight show of rain as we came down — my bu blanket done good service.

Friday May 26. wind come from S. force 6. with rain and thunder & lightning commencing at daylight. Therm. 60°. camp ground on low alluvium sometimes overflowed growth Elm (Ulmus Americana) (Acer dasycarpum) and Blk ash (Fraxinus sambucifolia) rain continued with gusts of wind thunder & lightning till 11. O.clk A.M. I saw in flower, also, near the camp a species of wild currant (Ribes Floridum) also growing along the margin of the river (Salix lancifolia) or lance leaf willow

B.M.

the clouds broke away at 2. O clk and the sun came out, so we struck our tent and embarked. we had not however ascended the river more than 4 miles when it began again to pour down a perfect torrent of rain, and to render the matter still worse, as the voyageurs were urging the canoe along to a favourable place to camp, (at 5 O clk P.M.) she struck a rock which was concealed beneath the surface of the water, and began to leak very fast so as to wet our blankets provision &c as we were just at that time at the base of a very high precipice, where there was scarcely level ground enough to pitch our tent upon we were compelled to go on some two or three hundred yards to find a place suitable, consequently between the leakage and the rain our affairs were pretty well drenched by the time our tent was pitched and our luggage placed in it. but Baptiste soon had us a blazing fire and our supper cooking. In the mean time we had opened our blankets & found they were not so wet as we had supposed. so whilst the voyageurs were cooking supper the rain stopped and the sun shone out beautifully. Mr. Macy being unwell had rolled himself up in his blankets and gone to sleep. and I had taken up a book and stretched myself on a blanket to while away the time as I best could when I heard Dr Parry call me to come to him on the top of the precipice at the base of which we were camped. Knowing he had found something worth seeing I picked up my hammer and ascend

the precipice, which I found to be over 500 feet high by winding my way amidst
the rock. as I came near the summit
where it was not very steep I saw him
standing barefooted, with ~~a few~~ his hands
full of flowers gazing around apparently
~~in a~~ perfectly delighted I called
to him and asked him what he had found
he replyed by telling me to not look back
till I had ascended to the summit where
he was standing, which I soon did, and
turning round I beheld spread before
me one of the finest and most splendid
views I ever saw. the spot on which we
were standing was carpeted with a
green sward sprinkled with a great
number of pretty flowers. along the
brink of the precipice were some stunted
pines cedars, birch, white bark poplars

everything was yet dripping with the rain
that had just fallen. the sun was
getting low in the west, and being partly
obscured behind a small cloud cast
broad streams of light thro' the interstices of
the cloud so as to produce that peculiar
appearance, popularly termed "the sun
drawing water." far to the west the
noble mississippi was seen winding
its way amongst beautiful islands towards till reached the very base
of the precipice on which we were standing
and then again winding toward the
Southw to where it formed a junction
with the vermillion and ~~still~~
further on with the St. Croix, and
still onward till lost in the dim
distance. Away to the south S.
S.E. & S.W. on the other bank of river was one boundless expanse

of green prairies with Island-like groves
of timber — some times as level as a
house floor — again gently undulating
and occasionally rising in drift hills almost
as high as that on which we were stand-
-ing. almost at our very feet as it
the smoke from our Camp fire was
seen curling up far amidst the
green foliage about [illegible] of the bluff -
[illegible] above the bed Mag. Limestone
the first out we saw after leaving our
camp this morning some two or 3 miles
below this was the Limestone down at
the waters edge. of course we have been going in
the direction of the dip.

Saturday morning 27th Still cloudy wind
from S. E. Saw in flower near the camp
the pretty little Sol. Seal Convallaria
bifida — with the C. multiflora and
C. racemosa — also a white [illegible]
the C. Anemone, virginiana. at all places in May [illegible] and the red limbed
Dogwood (Cornus sanguinea) at 7½ o'clock A.M.
we struck our camp and embarked
Therm. 61°

We had only proceeded about 3 miles
when there came on so severe a shower that
(at 9. A.M.) we were again compelled to camp
at 11 o'clk A.M. however the rain stopped and
we again embarked — saw for some distance
below Red Rock village the Mag. Limestone
down at the waters edge where it seemed to
show a small westward dip. At 6. o'clk
P.M. we camped for the night just above
Red Rock village and 7 miles below St.
Pauls — Still Cloudy — wind from E. force
2. Our camp is on the W. side of the

river on a low alluvial bottom in a forest
composed of the same trees seen near the
mouth of the St. Croix, with the addition
the cotton tree (Populus Angulata)
of Hackberry. I observe that since we left
the neighborhood of Nauvoo we have not
seen Beech, walnut, Hickory, the Plane
tree, black locust nor the tulip Poplar,
anywhere on the Prairies, among the
few scrubby trees seen, ~~are~~ the most numerous
is the mossy over cup oak

Sunday May 28. a warm rainy
morning - rain from S. force 1. - had storm -
gusty wind with thunder & lightning last night from the S. - prospect
for travelling to day, bad. hear the drum beating
at an Indian village a short distance above
us on the opposite side of the river (the Crow wing band of Sioux). they are
rejoicing over the scalp of a Chippeway -
embarked at 9. O'clk. A.M.

ate our dinner at the base of a bluff
just below St. Pauls 1. o'clk P.M. this bluff is
about 90 ft. high all sandstone except about
30 ft. of impure limestone on the top. the
sandstone so soft in places that millions of swallows
have perforated it and built their nests in
it. This sandstone overlay the up
Magn limestone seen at Still water
- saw in it [illegible] the underlying limestone
several species of Orthis one species of [illegible]
- above St. Pauls a pretty little village
on the west bank of the river which here
runs ~~xxxx~~ north & east. 5 m. below St. Peters
went out a few rods from the river up a ravine
to see and explore caverns cave, which was long
supposed to be ~~that~~ spoken of by Carver. it is
in the same soft sandstone mentioned above
we went into it about 50 yds. to a little

water falls and a beautiful clear pool of water. all round the entrance and for some distance in the cave, the Swallows have perforated these soft sandstone to make
names, Indian devices and dates 1740
nests. Saw in the water in the cave the same species of Limnea to be seen in the spring near our camp ground at still water, - a few bats were seen suspended from the ceiling which is not over 15 or 20 feet high at any place. there is in this region a general N. dip. This white sandstone is overlayed by a fossilliferous lime-stone supposed to be the equivalent of the blue limestone of Cin.

Arrived at St. Peters at 6 Oclk P.M. and camped on the bank of the St Peters River about 100 yds above fort Snelling. the fort is situated on a bluff 70 ft. above the water and between the St. Peters & the Mississippi river. it is tolerably large, built of the lime=stone overlaying the white sandstone just mentioned. The foundation of the fort is built upon this soft sandstone - there are about 80 men garrisoned here under the command of Capt. Eastman. Just below the mouth of the St. Peters is the village called St. Peters. I see growing along the margin of the river here a pretty yellow species of Corydalis the C. aurea

Monday May 29. remained all day at Fort Snelling. wind from free N. 6 to 8. all day. misty warm. Saw 15 or 20 canoes with from two to five or six Sioux squaws each, pass by our tent down to a ware house where they rec'd from the agent a portion of meat and flour and then passed back.

Tuesday May 30th clear morning

wind from N. N. W. force 5 and increasing Dr. Shumard is not ready to start yet, and it is questionable whether or not we will get off today. Dr. Parry, Mr. Raines and myself went two and a half miles up the Mississippi to see a beautiful Cascade which is called the Little falls. (Little Falls creek) a stream about twenty feet in width and 1 foot deep, plunges in one unbroken sheet down a precipice 40 ft. high into a deep pool. the rocks here are the same as those on which Fort Snelling are situated. viz. white friable sandstone with a capping of impure fossiliferous limestone in which I saw and collected the Pleurotomaria umbilicata P. subconica Modeolopsis, several species of Leptaena and an undescribed species of Orthis, an Orthoceratite and a Cyathophyllum. along the sides of the deep ravine in

which the stream runs in the Mississippi after pouring down the precipice, the springs contain a large quantity of calcareous matter in solution which they precipitate of the moss &c forming fine specimens of Calcareous Tufa. the limestone being so much harder than the sandstone and resists the action of atmospheric agencies so much better, that it juts over some twenty five feet so that we passed round behind the falling water. As the sun was shining brightly the white sheet of foaming water (which spreads out as it falls [illegible]) presents a very fine appearance as seen from the inside; but whoever enjoys the sight must pay the penalty of a complete wetting as the dashing of the water causes a continued current of air that whirls up the spray so as to wet any almost before he is aware of it to the very skin —

I saw walking about on the rocks dampened by the spray some large snails (Helix multilineata) of which I collected some good specimens. the face of the country between this and fort Snelling and indeed over a large scope of country lays in a rolling Prairie with occasional groves of small scrub oaks &c. along the creek I saw a grove of the american Aspen (Populus Tremuloides). On the top of the fossiliferous limestone before mentioned & immediately below the surface soil there is a deposit of drift of various depths over the whole country. I saw near the cascade several large boulders of grey granite and other primitive rocks laying on the surface their angles did not seem to be worn by attrition in water. One looked large enough to weigh 3. tons.

I saw in the Prairie here in flower the sand cherry (Prunus depressa) and hundreds of violets, [illegible] geraniums, asters, and in fact all the flowering seen in the Prairie before this

the voyageur (Provencher) for whom Dr Shumard was waiting came in this evening but too late for us to start. At sun set calm and clear, with scarce a breath of air stirring

There is a general dip to the west from Still water so that in coming here we ascend higher in the geological series. Featherstonhaugh mistook the silurian fossiliferous rocks here for (at fort Snelling) for the Carboniferous Limestone

Wednesday 31st May. morning clear wind from S. E. force 3. Thermometer at sun rise 68°F. Embarked at 9. oclock A.M. 12. Oclk M. Wind S.E. force 3. Temp. 71°F had several slight showers of rain. passed during the day several Indian villages. on both sides of the river. also saw several houses built on the brow of the hills over

inhabitants are half breeds. the valley in
which the river runs varies from two to
five miles in width, the bottom is generally alluvial
but sometimes composed of sand. the hills
as seen in the distance are smoothly
rounded and covered with green grass
with occasional groves of timber. the
valley is sometimes prairie and sometimes
thickly covered with groves of Ash, Elm
Cottonwood and Hackberry, and the margin
of the river is fringed with willows. camped
for the night 18 miles from fort Sully by water
at the mouth of a small creek (Mantah creek) that puts in
on the right side of the river. Sun set clear
wind from S. force 2. Temp 66°.

Thursday morning
June 1st Sky overcast with thin clouds
wind from S force 3. Temp. 66. 1/4
mile back from the camp groves with
tall red grass (Arund coarctata) - struck
our tents and embarked a little before
8. O'Clk. A.M. the bottom along for
some distance above or camp is covered
with thick beds of a beautiful tall grass
(Etrustheoplesis germanica). River
generally about 80 yd wide. current not
near so rapid as the Mississippi water less
= bed. no rocks seen since we left [illegible]
about 16 miles above camp passed an
Indian village on the Right side. all
these bands of Sioux cultivate small
patches of ground the government furnishes
them with a farmer and farming utensils.
Low rounded hills approach the river
on the Left side here. They are generally
covered with green grass and occasional
clumps of trees. 10 miles above our [illegible]

* Note Page 96

camp. we saw on the right side of the river in a large bottom, 7 or 8. miles wide, the first Tamarack (Larix Pendula) we met with on the St Peters. the swamp in which it grew seemed to extend back some distance. On the other side the river the hills, which are here from 80 to 100 high entirely without timber, approach within 300 yds of the river. between these hills and the river there is a long swamp or pond full of tall reed grass. about 3. miles above this on the right we come to the Six village band of Sioux: this is the largest and most powerful band of these extensive tribes. their chiefs name (or in English Six) is Shakopee, he is said to be the greatest warrior and orator of the tribe *

at 12 o'clk. clear excepting a few light clouds in N. E. wind 4½ S. Temp. 77° see no rocks yet. Temp at 2. Oclock P.M. [illegible] 75°

OW [illegible] in the grove

at 4½ o'clock passed Mr Sibley's keel boat on its way up to his trading post. Here hills along here (about 11 miles above the rapids) seen on the left side the river and clothed with trees. from the smoothly rounded form of these hills seen between this and the mouth, I have no doubt but they are underlaid by the soft sandstone seen at Fort Snelling.

Not very readily finding a good place to camp we did not pitch our tent till 6. Oclk P.M. as this scarcely allowed time enough to fix our camp and cook supper, we were all compelled to lay to and assist the voyageurs prepare supper, to one unaccustomed to such sights, our Camp would have presented a curious scene. here might be seen a stalwart voyageur with both sleeves rolled up, squatting on the ground, to his elbow in a bread pan kneading dough there another picking pigeons, another ing a pot of rice whilst the third was making coffee. &c &c &c

Mr Pralton went out back of our camp, ~~which~~ is right bank 25 miles above our last night's encampment, shooting birds he describes the face of the country as being a beautiful succession of rolling Prairies interspersed with groves of timber, reminding him of the cultivated grounds ~~face of the~~ and parks ~~country~~ in the prettiest parts of England.
at sunset wind S. force 2, Temp 71°

Friday morning June 2d sky slightly overcast with thin clouds. wind Course S. W. force 2 Course of clouds. W. SW. Temp 61

strong blast of wind Last night. Barometer fell 10 millimeters since 7 o cl P.M. last night, which indicates rain. Embarked at 9. 0 clk. A.M. at 11.0 P.M. [illegible] we passed the mouth of Odawan river, on left side -saw laying on the bank a deer which had just been killed by an Indian. On the opposite side is an Indian village, & on rowing were brought into little rapids, the water being high all we could see indicating the existance of rapids was a slight increase in the velocity of the current. usually at lower stages of water - there has to be a portage of 50 or 60 yds made here. We saw just above the rapids on both sides of the river on a low steep hill a buff colored magnesian limestone slightly oolitic overlaid by a similarly colored

sandstone - evidently the same rocks
seen at ~~Stillwater~~ ~~Fort Snelling~~ still water. these are the
first rocks seen on the St. Peters, in
place except at the * Six Villages where
Dr. Shumard says he saw in the bank of
the river the same rock. hills seen
here on the right side of the river, in the
distance well clothed with timber.
growth in the bottoms along the river
same as seen all along below, viz=
Populus angulata, P. Tremuloides -
Ulmus Americana, U. Rubra (a few Lindens)
(acer dasycarpum) and ash leafed maple
Ash &c. Wind at 12. o'clk. M. from S.W.
force 4. a few flying clouds course same
as the wind, Temp. 81°

Camped for the night about 19 miles
above the Rapids on the left shore. face of
the country back extensive stretches and open
by the river shore high, further back Prairie.
same growth seen at rapids, ground covered
with rank coarse weeds. grape vines Smilax &c
musquitoes plenty. wind from S.W. 1. a
few clouds course N.W. Temp. 72.

As we were about to sit down to supper
an old Indian chief with 8 of his braves
called from the other side to the voyageurs &
stated that he wished us to send over a canoe
for him. after considering the matter we
concluded it would be best to bring them
over, and sent the canoe. they were entirely
naked excepting their breechclouts & blankets
after we gave them some meat & bread
the old chief signified that he wished to
make a speech to us. we consequently
arranged ourselves in a semicircular
position round the fire with the

and whites on the other
indians on one side. when the old
after shaking hands with all the party
chief, drawing his blanket around him
spoke in substance as follows.

"We heard you were coming to see our country ~~and~~ we took the trouble to come from our village to see you. our great father has sent you and we bid you welcome. you have passed many of our villages on the river below without interruption. so will it be above. our great father wants to purchase our lands and has sent you to see them. our great father is rich. we his red children are poor. I have a large family. we want food, want you to give us an order to Capt Eastman at the fort for meat & flour. we are all brothers.

to this Mr. Ramsey replyed that we had no right to send an order to Capt Eastman for food that if they were in a suffering condition they must call upon their agent at the fort. much more was said on both sides but as I was merely a spectator & what I have writt I did not note it. The Indians did not seem to be very well satisfied with the result of their visit but at last rolled themselves up in their blankets and laid down by our camp fires so we were compelled to keep guard all night.

Saturday morning June 3rd. Clear wind N.W. force 1. Temp at sun rise 46°. embarked at 8. oclock stopped at bold elevation, which slopes beautifully down toward the river

about 4 miles above our last nights
camp ground. from the top of this hill
which is destitute of timber we had a
magnificent view of the St. Peters valley and surround
-ing County, which presents every variety
of prairie and woodland interspersed. this elev-
-ation is by barometrical measurement
above the (south)
133 feet high. back this there is a perfectly
level prairie which extends for about ½ of
mile to a still higher elevation which is
by Barom measurement 110 feet higher. on the
top of this there is a pretty little grove of
American Aspen Populus Tremuloides.
right on the apex of this hill which seems to
be made up of drift we saw many large
boulders of granite greenstone &c further
back I saw a very large one of gneissoid red
granite
~~rock~~ with large crystals of feldspar and

specimen [illegible]
quantity also saw in flower [illegible] Tradescant
([illegible] grandiflora)
virginica. Prairie Plum (Amorpha canescens
Prairie Potatoe which is
eaten by the Indians and said to be nourishing
along near the Base of the Second elevation
we saw in flower several species of wild
rose with many plants seen at other points
further down. in the bottom I saw
the sensitive fern
the same I found in Pittsfield field
and could not make out

all our stationary at 12 O. we [illegible]
from S force 2. Temp. 76 country seen
this afternoon similar to that passed this
morning. Camped at 5. O'clk P.M. one
and a half miles above the mouth
of Lower Bois Franc river on the
clear cloudy sprinkling rain
left side. wind course O. force O. Temp. 68°.

[illegible] up [illegible] the land back of camp 300 yds
hill made up of drift. Scenery just as and seen ~~[illegible]~~
below excepting there is more timber in proportion
to the prairies. Saw on top of the hill in passing a few scattering
white bark Poplars (Populus tremuloides) [illegible]
[illegible] oaks. in the bottoms the growth is
the same even as other Points thinly timbered below. heard
the cawing of crows across the river, and the voyag-
ers cutting wood down at the camp. the sun
Just set, not a breath of air stirring,

Sunday June 4th morning clear
wind N. force 1 [illegible]
sub- [illegible] Prairie
9 o'clk A.M.
[illegible]
[illegible] side of [illegible]
[illegible] E [illegible] these three species
grow more [illegible]

from the mouth of this river as high up as
we have ascended in wet marshy places
has shower at 11 o'clk A.M. Stopped at
the foot of [illegible] Island to eat dinner,
on [illegible] camp ground the poles
of 6 lodges were still standing and [illegible]
drawings on the [illegible] the
[illegible] they had killed when camped [illegible]
4 bucks [illegible] & 2 fawns. we collected
on the bank here many Specimens a
[illegible] ([illegible])
Comae wind from (at 11 o'clk) N.N.W.
force 1. Temperature 63° a few flying
clouds in the N.E. course of clouds from N.N.W.
river very crooked
country seen this evening chiefly woodland
[illegible] very rich as are all we have seen
in the middle of a pocket of [illegible] (writing [illegible])
on this river. pitched our tent for the
night at a little before 5 o'clk a
[illegible] used by the Indians to make lines as Hemp

short distance above the mouth of
Abertosaw, and immediately above a ~~point~~ short
bend to the left in the river. below and
in sight of our camp, in the bend, a loose
outcropping of a yellow magnesian
limestone is seen, apparently the same
seen at Still water on the St. Croix
our camp is in a dense forest of tall
Poplars. wind at sun set from W.
force 5. Temp 52° clear excepting a few
Light clouds in the West

Monday June 5th a few very thin
clouds flying swiftly up from the west. wind
from W.S.W. force about 2. blew all night
sometime much harder. Temp at Sun rise
39° felt chilly. embarked at 7½ o'clock
Am. at 8 oclock we came to the foot of
what is called big bend, as it is only about

1½ mile across and 7 round we concluded
to walk across and let the voyageurs go round
with the canoes. Soon after leaving the camp (on the Right side)
the Indian trail ascends onto the table land
where we had a most beautiful view of the
valley and lower table lands, both up and
down the river. Prairies and timbered land
are so interspersed as to produce the most
delightful scenery as far as the eye can
carry. On the table lands we saw black
and red oak linden Elm Over cup oak
and the first Sugar maple (acer sacharinum) than seen
on the St Peters. Just before reaching the
summit of the table lands, which are
at this place 280 feet high by barometer
at measurement we passed through
quite a thick~~et~~ growth of wild roses (Rosa
Nitida) they in bloom and scenting the
atmosphere with fragrance. we also

Geranium Convolvulus & in short saw, in flower nearly all the other plants mentioned as grown on the table lands further down the river. On a bold hill on a level with of the table land we saw where some Indians had camped the night before and made their supper on wild pigeons. As we descended from the table land at the upper end of the bend we came to a small stream running into the St Peters, called by the voyageurs Boeuf river. (ed River [illegible] killed a Beef here) near here at the foot of the hill we saw fragments of a white Limestone not in place.

Dinner on the left bank about 5 miles above Boeuf river. Wind N.W. force 2. Temp. 54° cloudy felt chilly at 2½ o'clock P.M. we came to a small prairie which terminates at a comparatively well timbered district which called Bois Franc commences at the mouth of little lower Bois Franc river. opposite the upper part of this prairie ~~B~~ upper or Bois Franc river puts in on the right. here commences on the R. Prairie La ~~[illegible]~~ Fleche or narrow Prairie. Camped on the Right bank at 5. O.clk about 15 miles below Traverse de Sioux. back of the camp is a beautiful rolling prairie. the highest elevation, about 2 miles back seems to be on a level with the table land at great bend mentioned this morning, which is in sight. the view from this bare elevation in the midst of this Prairie is very beautiful. Saw many large granite and gneiss boulders on the highest part of the Prairie. at 7. O.clk P.M. force and course of the wind O. Temperature 58° perfectly clear

Tuesday June 6th Fine Clouds with
rain Sun shine. everything whitened with
frost. Wind from N.W. Temp at sun-rise
51°. the boys caught a fine cat fish last night
as we were eating breakfast a fine buck
with branching antlers walked leisurely
down to the edge of the water on the
opposite side the river, and stood looking
curiously at us, as the river is only
about 60 yds wide here, he was in
good shooting distance. several of
the party sprang to their ~~guns~~ guns
but to no effect for taking the alarm
he bounded back into the thicket and
was soon out of sight

at 7½ O'clock we embarked. about
6 miles by water (3 by land) below [illegible] de [illegible]
we came to a low bluff on the right
bank where the same (Lime magnesian
Limestone) rocks seen at [illegible]
below the mouth of [illegible] creek crop
out. all country we have passed
through since leaving the mouth of [illegible]
(on the [illegible]) river is probably underlaid by this rock. It
goes by the name of "Mile Rock". It was
mistaken by Featherstonhaugh for mt
Limestone. As seen here it presents a
bluff about 60 ft high the lower five or 6
of which are sandstone and the rest
magnesian limestone. the sandstone
is very coarse; and the grains when seen
through a magnifyer are seen to be worn
round and smooth. although this region
of country is for some distance probably
underlaid by this rock still everything
here is so covered up by drift that it

scarcely seen. A few Cedars seen here the only fruits seen here ~~was~~ were a few Ligustra. dinner here. wind 12 o clk. M N.E. 1. Temp.re 67°. Dr Parry Mr Harris & myself walked across to Traverse des Sioux. the trail lies for most of the way over Table Land (Prairie) similar to that heretofore described after descending from the Table Land the trail passed for near one & a half miles through a densely timbered alluvial bottom timber chiefly Ash, Elm, Poplar hackbery and White walnut. thickly set with the nettle called Albany hemp and burr flower (Hydrophyllum

Traverse de Sioux (where we arrived at 3. o clk P.M.) is merely a trading post of Mr Sibleys, & co a missionary station Indian village &c. situated on the left side of the River. there is also a village on the opposite side of the river. We found several houses in association with Mr Graham, an intelligent half breed who attends to Mr Sibleys business at this place, and with the Revd Mr Hopkins a ~~[illegible]~~ Presby-terian ~~[illegible]~~ missionary who also resides here Mr Hopkins accompanied us to the village on the opposite side where we had grand talk and shake hands with the Indians Mr Graham Hopkins acting as interpreter. I was much struck with the mild amiable yet noble and manly appearance of the Chief of this band (most of the y. men were then away on a war expedition against) by the time we had gotten through with the Indians it was so late that we had only time run up a mile or so and pitch our tents for the night, which we did on the left side of the river. At Sun Set were cloudy. wind from E. 2. Temp 67°

Wednesday June 7th, at 6. 0clk all over cloudy wind S. E. 3. Temp 59°. our camp last night in a poplar grove on the edge of a large Prairie. camp in the midst of most of wild Roses now in bloom. they were the Rosa Parviflora. R. Nitida and R. ~~[illegible]~~ Lucida. Mr Hopkins informed us yesterday that in digging a well here they came to white sandstone, of cours the same seen at White Rock 3 miles from here. about 2 miles above

Embarked at 8 Oclk. about two miles above our Camp ground Provenchere pointed out some Conical Knobs some 2 miles back on the Right side of the river, across a low alluvial prairie in which he said the Indians found Lead ore, feeling a desire to investigate the matter we all got out, leaving the voyageurs to take care of the canoes and started across. after passing through a small grove of timber we came to small lake which lay to the right of the Indian path. seeing many shells along the shore of the lake Mr Preston and myself concluded to remain there to collect specimens of them whilst the balance of the company went on to examine the lead mine. we saw and collected some fine large Limneas, and Planorbises also a ~~several~~ species of Cyclas specimens, physa &c. amongst others we found a small flat species of Planorbis which is probably a new species. In the lake we saw many white pond Lilies (Nymphaea odorata and along the shore a tall grass.

The Lead mine turned out to be a few solid bits of galena in a drift bed amongst the gravel. At 12, o clk M. wind S.E. & Therm. 63° Raining. a few hundred yds above this, on the left side of the river we saw a low sandstone bluff evidently the same seen below Traverse des Sioux, called white rock, but the superincumbent magn. Limestone is not seen here, having been denuded away. In the chinks of the rock we noticed among other plants the Pretty little fern (Aspidium Lunne) the same rock was again seen on the other side the river a short distance above. Featherstonhaugh considered this rock the coal Limestone. this bluff being higher the Limestone is about 10 feet thick on top here. there must be a dip from white rock here of some number of feet as sandstone only reaches up 25 feet above the water to where the Limestone commences, found here part of a Trilobite & some Lingulas in the limestone. Saw here the Cornus Sericea the species of dogwood used by the Sioux in making Kinnikinick. At 4 h. o clk we came to Makasa-usa or white Earth Bluff which is about 70 feet high the sandstone being here about 50 ft. high the bal is mag. Limestone. Featherstonhaugh (in his report) mentions this bluff and the surrounding scenery of which he gives a very good description excepting he says the bluff is 70 yds. high and that the masses of Lime-stone seen back on the Prairie are boulders. the first is probably a typographical error, and the masses of

Limestone are merely harder masses left as the surface of the country has been denuded away. I saw large piles of limestone laying exactly in place in three strata which looked as seen on the green prairie like little houses there are however many large boulders of granite gneiss &c scattered amongst these masses of limestone. I saw one as high as my head and 14 steps round how deep it was buried beneath the soil I have no idea. as it was late when we had made a few observations here and we wished to give it a more minute examination we camped for the night at sun set somewhat cloudy wind S.E. Temp 65°

N.T.
Thursday June 8th cloudy rain & wind during the night. wind this morning at 5 o clk A.M. S.S.E. 2. Temp 60°

I see growing along the bluffs here the same wh birch I saw at Still water and mistook for Betula Papyracea. It is the B. Populifolia the red cedar and Prickly ash also grow here

embarked at 8. o clk A.M. about 4 miles above on the left side we saw the sandstone at the base of a hill 250 ft high. the sandstone was only seen to extend up about 40 feet but probably goes much higher as some loose pieces were seen near the top of the hill. no Limestone was seen either in or out of place the hill is well clothed with timber. from the top we could see the prairie back of white earth cliff, covered with boulders and masses of limestone in place.

at 12. o clk cloudy ~~&~~ raining wind

S S W. 1. Temp 63°. took dinner of cold bean soup, cold mush cold corn bread & sugar on a sand bar, in the rain, about 8 miles beyond the sandstone bluff last mentioned, in an S.W.S. direction we came to a steep hill on the Right bank about 70 feet high which is entirely composed of sugar Limestone. saw no fossils here. a short distance beyond this probably 20 miles above Traverse de Sioux we came to bluff on the Right side the river where we saw sandstone running up about 60 ft above the water with about thirty feet of ~~on top~~ magnesian Limestone on the top containing its characteristic fossils. Dr Shumard, Mr Macy & myself ascended the bluff and saw many fragments of Limestone laying in place where it had been left by the surrounding strata having been denuded away similar to those seen

at white earth prairie, seeing a large granite boulder laying on the prairie some 200 or 300 yds back from the bluff we went back and measured its circumference, which we ascertained to be 86 ft at 5. high. as we were about going back ~~Dr~~ I jumped up on the boulder to take a survey of surrounding objects when I was surprised to see apparently near ¾ of a mile back the valley of a river cutting across the prairie in an E.& W. direction, with steep cliffs of rocks on the side opposite us. I mentioned it to Mr Macy & he remarked that it was the St. Peters and that we had just passed there in ascending to where we left our canoe that the winding course of the river had caused me to think it the valley of some other river. but upon further reflection we remembered we had not passed any such cliffs recently. so we went over to see what it was. as we approached it Mr Mary exclaimed it is an ancient bed of the St Peters & sure enough it is. The St Peters here makes a short bend to the N. including a large space and this old bed cuts across in an S. & W. course. it is about 520 yds wide at mouth & 50 ft deep. being about 30 ft. above the present bed of the river. the rocks on both sides are precipitous. as we wished to make a more complete examination camped for the night on the opposite side the St Peters in a grove of Sugar & Maples linden ash &c at sun set all over cloudy. wind force 0. course 0. Temp 58° Some rain this afternoon

Fryday June 9th morning at 6½ o clk clear. wind N.W. 1. Temp 56° went over the river & made a regular survey of the ancient course of the St. Peters we noticed on the surface of many bare limestone on the table land prairie, here as well as at White Earth Prairie, many pot holes proving that these rocks have been laid bare by running water. the distance here, across the table land, which is always bounded by higher elevations apparently once the limits of the St. Peters when it was vastly larger than at present, is about 3. miles the lower table land between is generally very level and elevated about 70 ft. above the present level of St. Peters river. the bottom alluvial land (70 ft lower than the table land) is here near the mouth of the ancient bed of St. Peters covered with a dense forest of Elm, Ash, cotton woods, hackberry white & black walnut this is the first black walnut we saw as we ascended the river. the bluff here which is 80. ft. high is 60 ft sandstone and 20 ft mag. Limestone. the Limestone back along the cliffs of the old bed is much thicker which shows there must be a slight dip in that direction

at sun set clear fine course of the wind O. Temperature 65°.

Saturday June 10th 6 Oclk A M clear fine wind S. course variable.

Temperature 51°. Started at 7½ Oclk A. M. field notes of the river from the tree where our survey of the old bed of the river comes into the St. Peters to where it left the same. from tree S. 71 W. to bluff 600 yds thence S. W. 300 yds. thence S. 40° W. 225. thence S. 30 W. 75 yd thence S. 10. W. 200 yd thence S. 20. E. 50 yd. thence E. 300 thence N. 70 E. 150 yd. thence N. 45. E. 225 yds. Thence East to lower bluff where the old course of St Peters left the present one) 550 yds. thence S. 30. E. 350. yds after which the river bends gradually to the W. about 8. m. above last nights camp we saw table land on the R. sloping down to S. E. so as to bring the mag. Limestone about 30 feet above the river.

1 m. above place last mentioned
Saw here 2 squaws and 3 papooses on the
R. bank fishing. the sun being warm they had used
a little bower of bushes. saw many boulders on
the bank. we run up to the shore and
gave the squaws some bread and started
on, when we had only gone a few 100 yds before
we heard some one calling to us. on looking
back we saw two Indian men running after
us and following. we stopped & asked what he
wanted & he replied he had just returned from
a hunting expedition. that it was his family
we had given the bread to and he wished to give
us some venison. he soon came up with
a young girl load with fine venison for
which we gave him some flour pork &
tobacco twice the amt in value of the venison
and a string of beads to the girl with
which they all seemed mighty pleased

about 2 miles beyond we came to
the mouth of Blue Earth river which
is about 50 yds wide, 4 to 10 feet deep at this stage. Just opposite the
mouth of the Blue Earth river there is
a steep precipitous Bluff 90 feet high
50 feet of which is Sandstone and the 40
bed (on top) Lower magnesian Limestone with drift on top,
all of which show a dip to the N.N.W of
near 10°. many red cedars along the
cliff. on the top red & Black oak. in
the valley same trees seen there as at other
points below. the hills bounding great
valley of St. Pet here are only about 1 mile
apart with no table land in the valley. It
seems to have sloped down to nothing. near where
we saw the Indians.

at 12. o'clk M. we entered the mouth
of Blue earth river. Clear, wind

mouth 1. Temp. 78.° a continuation
of the same rocks seen opposite the mouth
of Blue earth are seen on the left
behind which there is a low level bottom
Side the river in a high bluff, soon after
entering the mouth. 1. mile from the
mouth due S. a bluff on the Right Side
Sandstone 43. ft. & Limestone 27. feet
upon which there is probably 30 feet
more of drift or Limestone covered with
drift. many rapids with gravelly
bottom near the mouth.

at 3½ O clk P.m we came to the
mouth of ~~Lassur~~ Lesueur River which were ord-
ered to explore. so we left the Blue Earth
and Started up the Lassur, which is about
60 ft wide & from 2 to 5 feet deep at this
stage. water very clear and full of fish
at the mouth there is on the Right

drift
Side a high bank with a ~~[illegible]~~
~~[illegible]~~
~~[illegible]~~ above the water. from this down
wards there is a steep talus of earth &
boulders
~~[illegible]~~ that hides the underlying
Sandstone if it is there. the valley of
this river is generally about ½ a
mile wide and bounded by hills
about 250 ft high. well clothed with
timber. after ascending about 2½
miles up the Lesueur river we found
it impossible to go any further with
our loaded canoes as there was not
enough water. so it was concluded that
Mr. Macy Dr Shumard, Boschmere
and Baptiste shall take one of the Canoes
with 4 days provisions and go on
Leaving Mr. Haynes Dr. Perry, myself

with Provencalle & Pierre to remain here at the mouth of this river till their return. Just where we are camped the valley is narrow and the river sweeps close in round the base of the hills on the left shore; and opposite our camp where the hills are 213 feet hight & there ~~have been~~ are many very extensive slides exposing nothing but drift. At sun set clear fair and evening the wind 0. Temperature 69°

Sunday June 11th Sky smoky overcast with thin clouds, wind at 6 o.clk the N. W. No. 1. Temp 65°. Mr Macy & Dr. Shumard started up the river at 8 o.clk this morning, they also took with the Provencalle. I went over the morning to ascertain the hight of the drift hills. I found by Barometrical observa-tions that it is 213 ft. hight. on the top there is a dense forest of large trees mostly Linden red oak white walnut &c soil rich. near the foot of the hill below our camp I saw in place apparently the same sandstone seen underlying the lower magnesian Limestone along the Blue earth, St. Peters & at Still water. I noticed here in this sandstone a peculiarity I have not seen at any other place, and probably that which has given rise to the opinion that coal exist some where near the head of this river. Pieces conglomerate with masses of sand cemented together with oxide of Iron is abundant among the pebbles seen in the bed of the river, this has been thought to indicate the coal formation, but I am certain these masses come from the above mentioned sandstone (which

belongs to the Lower Silurian System
from actual observation for I saw it
in this rock. the sandstone I only saw
extending about 40 ft up the hill. if
it exists any higher up, or if there is
any of the overlying or a [illegible] Limestone
here they are it is almost impossible to
ascertain the fact for every thing above
is so buried up in drift as to render
it impossible to ascertain anything
more in regard to it. this drift seems
to be chiefly made up of sand and clay
with a few gravel & occasionally a boulder
ceder birch &c grow above the steep
sides of the hills. at 12. o'clk Wind S.E.1.
Temp 85. clear. at sunset wind force &
course 0. Temp 72°. slightly hazy

Monday June 12. 7 o'clk A.M. a few flying
clouds; wind S.E. 2. Temp 68° at 7½ o'clk
A.M. at 6. O'clock P.M. wind course
variable force 1. Clear. Temp 78°.

Tuesday June 13th 6. o'clk clear. wind S.E. 1
Temp. 76° Mr Macy and Dr Shumard
returned last night at sunset. they found
everything above as I had supposed. only
drift underlaid by Sandstone with congl
omerate in it and impure iron ore. as
the hills on the opposite side the river
are mentioned by Nicollet as the locality
of the famed blue earth. Mr Haines. Dr Parry
& myself started down several hours ahead of
the canoes to search along the slides for
it. we saw in flowers here for the first
times in my life the beautiful Ladies
slipper (Cypripedium Spectabilis
the birch I mentioned as growing

alongshore is the Betula rubra.
at 11 o clock we all arrived at the
mouth of the Lesueur and started
up the Blue Earth river. after ascending the latter river about one and a
half miles we came to a bluff on the
left 190 feet high there is at the base
55 feet of sandstone on which there
is 35 feet of the Lower magnesian Limestone the rest of the elevations is drift
the summit is Prairie Table land
Just here there is the worst rapids we
have yet met with in the river. at the
Junction of the Sandstone and Limeston
there is a thin band or seam of tough
clay & sand coloured with silicate of Iron
a deep Indigo Blue. this is the noted
blue pigment of the Indians mentioned by Feath. & Nicollet and Lesueurs
copper mine. at 12 o clock M. clear
wind S. E. 1. Temp. 85°

Camped for the night 6 mile above the
mouth of Lesueurs River on the Right bank
at the base of the hills saw the Sandstone
cropping out at several places between this
and where we found the blue earth. we have
not seen the Limestone since we left. that pl
though there is a ledge of rock on the opposite
side the river here which we have not yet examined which seems to have a third layer of
mag. Limestone on it. we will see in the
morning. we measured the Sandstone below
our camp at several places & found it to be
generally 60 feet high. passed through many
strong rapids. the valley of the river is
not more than 70 yds wide so that at

many places we scarce find enough level
ground to pitch our tents upon. Several small
Islands below - seem to be based upon Boulders
hills on the opposite side the river here
have only a few scattering trees along the sides
and a pretty little grove of aspens on top
back of them is a vast Prairie. On this side
the hills are thickly clothed with timber
among which I saw Sugar maple linden
white walnut red Birch cedar and a
Species of dog wood I have not seen
below (Cornus circinata) I have not
seen the soft maple on this river or
[illegible] River. At Sun set clear. Wind
course force 0. Temp 77°

6.5 A.M.
Wednesday June 4th Beautiful
clear morning. Wind N. 1. Temp 68°
musquitoes very troublesome last night

and this morning. Mr Macy saw the
Limestone only a few inches thick on
top of the hill back of our camp. the
Sandstone was 60 ft high. Started at 8
o'clock A.M. continue to see the sand
stone cropping out on both sides the
river without any Limestone on top for
4 or five miles up apparently dipping
to the N. a few miles further on we saw
bold bluffs sand stone where there was a dip 6.S.E. 3°
saw in the sandstone several impressions
of Lamphalus. many rapids of 4 or 5
feet fall in 40 or 50 yds. Shore lined
of wild rose now in bloom. saw the nest
of a pair of bald eagles a few miles below
in the forks of a large cotton tree on the right
shore. the old ones soared round and kept
an eye upon us for several miles. we

took dinner at the head of the 8th Rapid ascended since morning. See the Sandstone all along but no limestone on top. the hills seem to be 160 high 60 Sandstone with 100 drift on top. at 12. o'clock Wind W. 1. Clear. Temp 85° Immediately after eating dinner and starting came to a prairie where the river makes a great bend to the right (going up) forming a complete horse shoe near 5 miles round whilst it is not much more than 300 yds across. this whole bend may be said to be one continued rapid. the rapids between this and where we camped ~~the~~ last night raised so much that the ledges of Sandstone that were 60 feet above the water there are not 90 above it here. the hills and country on the right here, well

timbered on the left Prairie—all rich soil. after reaching what we had suppos to be the head of the Prairie rapids we found that the river continues to make short bends for several miles above, and all the way one continued rapid. The voyageurs being nearly exhausted we were compelled to camp at what may be considered about the middle of this great rapid which is near 6 miles long. Camp on the edge of Prairie on left shore. Sunset Clear force of wind 1. course SSE Temp 70

Thursday June 15th 6. o'clock.
Clear. wind S.W. 1. Temp 72°

We started at 8 o'clk A.M. all the company on foot across the Prairie except the voyageurs who were left to bring the canoes up over the rapids arrived at the head of the rapids at 11 O clk very hard. the river full of large boulders sandstone now not more than about 10 feet above the water. after ascending a with a small rapid the river becomes more ~~rough~~ smooth and the sandstone seems to be lost sight of. at 11½ o clock we passed the mouth of Watonwan river which puts in on the left. its waters are much more clear than that of the Blue Earth Just above this we saw laying in the river some very large boulders of granite one in particular appeared to be large enough to weigh 200 tons. here the river is much more narrow than at the rapids below. the elevations along the hills or bluff banks which is

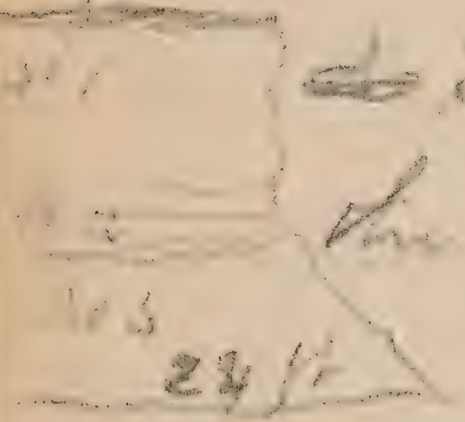
about 70 feet above the river appear nothing but drift. at 12. O clk M Clear wind S.W. 2. Temp 87°

Camped for the night about 7 miles by water above the mouth of Watonwan and Afternoon on the Right have seen nothing but drift since we left the upper part of the rapids below the mouth of Watonwan. Wind at sun set, variable 1. Temp 81° a few clouds in the west. musquitoes plenty. See growing near our tent the virgins bower ~~[illegible]~~ (Clematis virginica) Also dodder (Cuscuta Americana) Also saw in the Prairie the Rosin Plant (Silphium perfoliatum) and the red lily (Lilium Philidelphicum)

Friday June 16th 6. O clk A.M.

partly clear wind S.E. 1. Temp 70°
musquitoes so numerous where we ca

last night that it is impossible to sleep or lay still a moment without being under a bar. and this morning in the shade it is necessary to be under the bar to read or write — have never seen them so numerous in the Ohio bottoms.



Started at 6 o'clk this morning after about 2½ hours run we came to a bluff bank on the left where the following section is exposed. No 1. Buff Indurated arenaceous clay 11 ft thick similar to that usually seen forming the top of the drift in this region excepting that it contained the Helix Alternata and many other species of Helices also cyclas. Pupa &c No 2 is three feet thick composed of gravel with many species of unios cyclas, Physas, Patellas, Limnaea & of identical species with those seen now living in the rivers. No 3. is [illegible] ft of a bluish gray marlite with no shells. which appears to be the same seen at the lower part of the drift in the numerous slides seen below on the river but it reaches 25 or thirty feet higher thus showing that the river has not cut so deep in the drift here as there the thickness of this bluff 38 ft. shows that this river has deepened its bed much since the deposits was made. I see many things along these streams which indicate that at comparatively no very remote time they contained much more water than at present. Back of the bluff last mentioned 2 or 300 yds away a prairie on the same level with its summit there is seen a high rolling Prairie probably 60 or 70 higher. this may have been the bank of the river when it made

the aforementioned report. on the other
side we passed a narrow low timbered bottom there
is another high elevation which was
probably the ancient right bank of the
river. At 1½ o'clock there came up from the S.W.S a
tremendous thunderstorm with wind
& hail, during which the mercury
fell from 88 to 67° being a dif. 21° in
two hours, Provenchelle being sick we had
run up to the left shore and were waiting till
he would feel better. we saw the storm coming
but thinking it would be soon over we did not
pitch our tents but depended on our gum
cloth to protect us and our provisions but it
was such a tremendous fall of rain that
our canoes soon became nearly one foot
full of water so as to wet our provisions
very much. But as the storm commenced

[illegible] remarked that he thought we had
best move a little higher up as we were in
danger in case some trees that stood close
by should blow down, which proved to be
a wise precaution, for during the storm a
large willow fell exactly where our canoe
had been landed. the wind was soon
over but the rain continued to pour down
till we saw we must pitch our tents or
lose all our provisions. so we crossed to
the other side of the river where the
best camping ground is. and pitched our
tents in the midst of a hard shower.
under ordinary circumstances the voyageurs
pitch the tents & carry in all the baggage
but in such cases as this all hands lay hold
and do all they can. None but those
who have experienced such things can

We now see how unpleasant it is to be voyaging this way - everything is wet - the rain still pouring down & the everlasting musquitoes continuing to bite with unabated vindictiveness - all taken together constitute as disagreeable a situation as one can well be placed in. But at 2. O clock the Clouds broke away and the Sun came out bright and clear, so that our affairs were soon opened and Spread out to dry when we were pleased to find that our bags of flour were not wet more than an 1/8 of an inch and the only thing much injured was one bag of Sugar & even it was not wholly Spoiled.

Whilst we were thus engaged Mr Haines & Dr Carry who had started to walk across ahead previous to the storm, and were out in it all, came to the opposite side the river & being as wet as they could be, plunged into the water and swam across. During the hardest of the Storm I noticed Baptiste, who like most of the voyageurs, has a great dread of thunder and lightning, draw his blanket over his head & wrapping himself scrounch down in the end of the canoe.

As it took several hours to dry our affairs and there was still some appearance of another Storm we concluded to remain where we was all the evening although we were not much over 3 miles above our last nights encampment

Saw in flower near camp the Spindle tree (Euonymus Atropurpureus) this is the plant I saw in flower along the ravine between Scarborough & Westons fields and could not make out. It

where it seems to belong
is placed in the 5th instead of the 6th class, On account of the imperfection of the Linnaean System. also saw here another Dogwood the species of (Cornus Paniculata)

at sunset cloudy wind variable 1. Temp 65°

Saturday June 17th at 7. oclk A. cloudy & having rained all night. wind N.1. Temp 65° Provisions still small. Started at 9. Oclock. took dinner at 1. Oclock on the left side at the foot of steep Slide of drift. See bits of Limestone among the gravel & Boulders along the Shore. see up in the Slide among the drift small pieces of Lignite - saw the same on Lesueurs River and at several place on the St Peters the summit of the drift hill 65 feet high mentioned runs back at the same level S. m.

to form a pretty prairie. Saw here in flower many Species of Phlox, the red Lilly Philadelphica, wild roses virginica &c. On the other side a low Bottom clothed with the same Timber seen on Similar Situations lower down. wind N.N.W. 2 flying clouds with prospect of rain. Temp. 73°

Camped for the night about 15 miles above our last nights encampment on the right bank in ~~an [illegible]~~ low bottom covered with a fine forest of cotton trees see growing near camp Prickly Ash (Xanthoxylum Fraxineum) Staghorn sumach (Rhus Typhina) also the Rhus Toxicodendron) we have often been much put to it to find a camping place both on this river & the St Peters free from the Poison Plant but as yet none of us have been poisoned with it. at Sunset clear. wind N. W. 1. Temp. 67° seen no rocks in place yet everything is buried in drift. but saw among the boulders along the shore many loose pieces of limestone apparently the lower magnesian. Found during the day on the shore a large piece of Lignite. smaller pieces are frequently seen

Sunday June 15th 5 o.clk A.M. Cloudy. Wind from s comm o. Temp 56°. see nothing but drift yet. dined at 12½ o.clk on the left bank at the foot of a bluff where the river has cut in against the drift showing the following section (see back of the book) 15. ft. above water green=ish yellow arenaceous stratum in thin horizontal laminae. on which 3 ft. of Bluish gray Tough marl. capped with indurated buff col'd clay with much sand mixed. have seen the latter two at all pts where the drift is exposed, but not the former before. — partly Cloudy. wind N. E. & Temp 68°. We camped for the night on the left bank of the river in a beautiful grove of Elms Cottonwood sugar maple & ash do (Fraxinus Epiptera) this is the prettyest camping place have yet met with there are just trees enough to make an agreeable shade whilst the vast prairie just back of the grove together with the wild roses with currants Strawberry vines &c give a rural domestic like appearance to the spot which calls to mind familiar scenes far away. The men killed 4 young wild geese today of which we had a fine pot of soup for supper. alth=ough from the number of deer tracks we everywhere see, they are evidently

very abundant we have not yet killed
any - our company make too much
noise. we are still in the drift. Sun
set clear with a gentle breeze from
the west (1). Temp 56° distance made
today about 15 miles by water: but this
is so very crooked that it would be very
difficult to estimate the distance by
land

Monday June 19th at Sun
rise clear wind force & course 0. Temp 50.
started at 8½ oclock. the men caught
4 young wild geese. see Only drift. took
dinner at the foot of a bluff of drift on
the Right side 85 feet high saw here on
loose bits of limestone pieces of Lignite Some perfect
specimens of Euomphalus & Others similar to
those seen in the limestone at fort

Snelling. Cloudy with occasional Sun ~~[illegible]~~
shine. hear distant thunder. wind N.W. 2
Temp. 75° river more full of fallen timber
than we have seen it below

Camped on the left side about 16 miles
above our last nights encampment. we are
still in the drift formation. found several
large pieces of Lignite apparently deposited
by the same cause that deposited the boulders
& other drift. the men killed a large female raccoon this afternoon we had some difficulty in
getting under large trees which had fallen
across the river. there is a large quantity
of drift wood crowded together in ~~the~~ a
bend of the river just above us so as to
completely obstruct the river and compell
us to make a portage around it - this is
the first place we have found it necessary
to make a portage from any cause

whatever. we had two hard showers of rain this afternoon, the latter of which was quite a storm with loud thunder and vivid flashes of lightning — Sun set clear. not a breath air stirring & Temperature 66° the musquitoes are intolerably bad more than we have yet seen them.

Tuesday June 20th 4½ o'clk A.M clear wind N. 1. Temp 55° On account of our portage we did not get off this morning till 10½ o'clock. had to cut our way through the top of a large sugar maple that had fallen across the river. Mr Patten very sick. took dinner on the Ky left side at 1 o'clk. we had here to cut our way through a large cotton trees top. Killed 4 wild geese. Saw nothing but low alluvial bottoms well timbered. by the flying

clouds. wind W. 3. Temp 78° the characteristic forest trees seen the last few days cottonwood, Blk walnut, the sugar maple ash, hackberry & the cotton tree is the giant of the low land forests & grows to a very large size — especially the tulip tree of Ky. after ~~getting~~ cutting through over this obstruction we had only gone a short distance till we came to where two more large cotton trees had fallen across the river and arrest the flood wood so as to completely obstruct the channel, to cut through seemed as though it would require several days and to make a portage would would a have been exceedingly laborious as ground on the left side was hilly and a perfectly impenetrable thick of hazel, currants, rose bushes, grape vines, canes, smilax &c whilst the Right side was a low bottom swamp and equally overgrown with Brushes so that after considering the matter we concluded to make a portage right over the midst of the drift Pile. this was however sooner accomplished than one would suppose, and we were again afloat; but after passing on about a mile we had to cut our way through another Mass of logs which occupied much time and required a great deal of labour. This done, and once more on our way we began to flatter ourselves that the difficulties of the day were over when we came to still another raft of timber much worse than any we had seen. It was now 4½ o'clock P.M. and after laboring till 7 o'clk we at last got through, and pitched our camp on the R. shore a short distance above, having only made about 4 miles during the day. our Course yesterday evening and all day to day was through a low alluvial bottom. where no rocks are exposed. Mr Pratten still very sick. at sun set. Clear. Wind F. & C. O. Temp 60°

Wednesday June 21st 6½ o'clk A.M. Cloudy, Wind S.S.W. 1. Temp 57° Started at 8. o'clk A. after going on till near 1 o'clk (5 miles) we came to a kind of bayou that putting on the sight. it is about the width and depth of the Mankato. no current. soft blk mud at the bottom. timber along its sides went about ½ a mile up it but did not come to the end. have not had to make any portages or cut over any this morning dinner on the Right side 6 m. above last camp. slight sprinkle of rain cloudy— for. Cor of wind 0 Temp 68°

Camped for the night 12. m above last camp. on the left side in Low bottom grove of maple elm, Ash &c about 50 yds N. of camp after ascending a steep bluff 60 feet you land upon the edge of a vast prairie that stretches N, S.W, & S, as far as the eye can carry due west of us probably ~~four or 5~~ 6 miles across the Prairie a higher

See 96. Bush / Book ~~[illegible]~~ ~~[illegible]~~ Richarson

or line of low hills) broken country, are seen all destitute of trees and clothed with grass. these hills present a very beautiful appearance as seen in the distance S. W. the prairie is very level and reaches so far that it is difficult to distinguish the line dividing the horizon from the surface of the ground. beautiful ground magnificent. saw several of the Cat— [illegible] Baxies. the men killed today two old wild geese, three young ones more than half grown, one wood duck & two great herons (Ardea Herodias. at Sunset wind 6. 1. Temp. 60° nearly clear [illegible]° (made about 12. m.)

Thursday June 22d cloudy. wind N.W. 1. Temp. 54 as we have met with much difficulty for the last two or three days in getting along over the flood wood in the river, and consequently our progress so slow it was determined that Mr Macy and Dr Shumard should take one of the canoes with 5 or 6 days provision and two of the men and go on leaving the bal. of us here to go out and see what the high land on the prairie is and make barometrical observations as to elevations &c Rain all the forenoon. at 12. M. wind W. 1. Temp 59° still cloudy. 6½ o'clock P.M Rained all the afternoon wind variable force 1. Temp. 60° cloudy and still threaten rain although the barometer rose since noon 6.2 millimeters. Remained in Camp all day

Friday June 23. morning clear wind N.W. 2. Temp at 6½ o'clock A.M. 54° at 7. o'clock Dr. Parry, Mr. Haines Myers started out to the high land seen on the prairie 3. hours walk brought us to it. In crossing the prairie we waded through a prairie pond full of high grass where we saw and collected some very beautif shells (Limnea Elodes   ) when we came to the hills, when we arrived at 9. o'clk we found them ~~about~~ covering a space of about 80 to 100 acres they generally approached the conical form and appeared to the eye to be elevated about 60 feet above the lowest part of the prairie. they are made up of gravel and boulders of granite green stone, with pieces of white limestone &c West, W.N.W. & W.S.W. no timber was seen, S.W. & S.S.W. something like, the tops of groves of timber was seen, a little above the Prairie on the distance due South no. timber. all round E. S.E. & N. E. the course of the blue Earth can be traced by the timber, which is generally about 4 to 6. miles distant. These hills resemble very much the moraines described by Hitchcocke. They are the highest land seen in the widely extended view

at 12. o clk M. clear. wind W. 1 Temp. in sun in open Prairie 76°

6. o clk P.M. (at camp). wind W. N.W. 1. Temp. 72 clear.

Saturday June 24th 5. o clk A.M. clear. wind W. 1. Temp. 61. at 1. o clk P.M. clear. Wind S.W. 2. Temp. 80 prairie, back of camp by barometrical observation 50 ft above river. hills seen in the distance 70 ft. higher. Mr Macy & Mr Sherward returned this evening at 7. o clk. P.M. they state they ascended about 38 miles higher by the course of the river, & about 10. by land. River very crooked current 3/4 m. per hour. saw nothing but drift — made 3 portages over flood wood. Killed this evening as they came back 4 wild geese 1. otter. 1 fawn. as they went up 2 geese & one mink

at 6. o clk clear. Wind S.E. 1 Temp 86 — musquitoes intolerable

Sunday June 25th 6½ o clk A.M. a few thin clouds to S.W. — Wind S. 2 Temp 66°

as the men are very much fatigued and anticipate very hard work going

However it was determined that this Sabbath should be over and a day of rest to us all, so we did not start.

In reflecting about the natural advantages, and disadvantages of the country seen along the Mankato, the observer is first struck with the great beauty of the Country as well as the richness of the Soil. The immense Prairies require only fencing to be fit for cultivation. But like other Countries it has its disadvantages amongst which is its high northern latitude Scarcity of timber & good water. Though I think the latter could be obviated by wells the only Trees fit for rails I have seen are Blk walnuts and they are only found along the river bottoms in a few Instances & not abundant I would suppose the Climate too cold for corn; but wheat and Irish potatoes grow well; especially the latter. I have not seen a Spring on the Mankato or Lesser Rivers. – nor one in the Prairies – but sloughs and ponds with tolerable drinking water are frequent On the Prairies

at 2. O clock P.M flying clouds with Occasional Sun shine. Wind S. E. 2. Temp. 81°

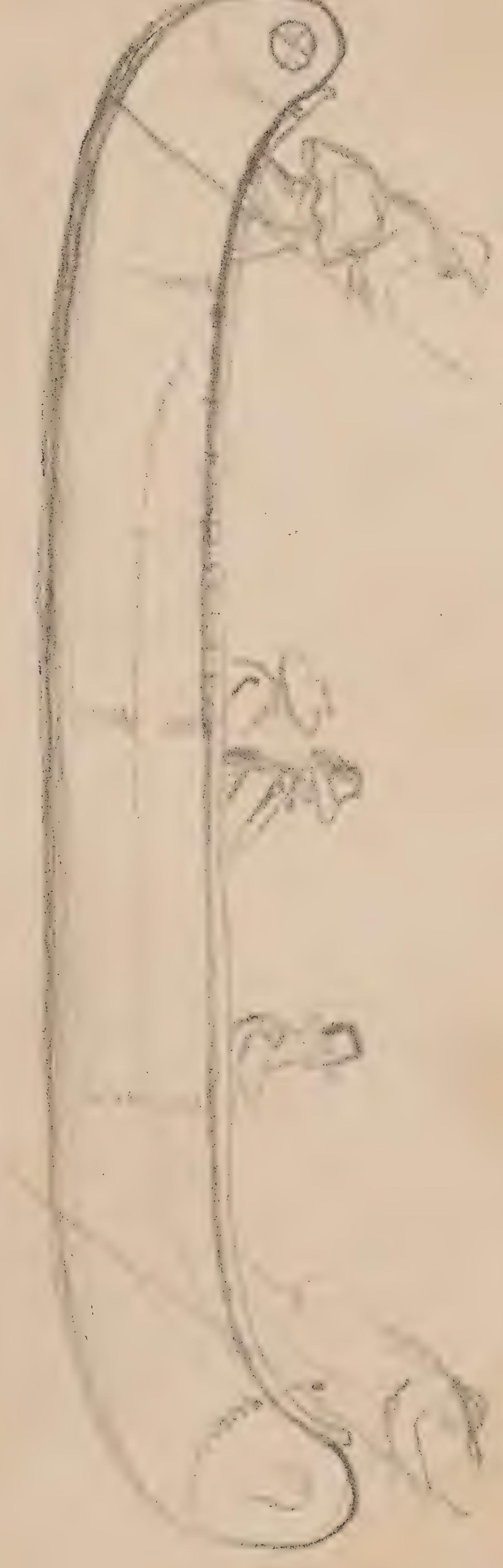
at 5. O clk P.M. Rain thunder Storm. from S. E. at 7. P.M Cloudy Wind S. E. 2. Temp 76°

Monday June 26th rain all night thunder & lightning. 6. O clk A.M Cloudy Wind S. 3. Temp 78°

at 9½ O clk we embarked in our

downward course to the St. Peters
again. At 12½ P.M. dined on the
Rapid at the ~~last~~ first of our old camp
as we came up
grounds we had come to-morning
came this morning a distance that
occupied a whole day going up. —
Sunday Wind 1. S. Temp 81°

Made our last Portage (14th) to day
and camped at 17 min of 3. o'clock
P.M. As we came down the way
young
a deer was seen quietly feeding on the
River bank 4 guns were simultaneous-
ly discharged at it - It made a few
bounds back from the bank in the
thick bushes evidently wounded.
Battist leaped ashore and followed
it. In a few moments we heard his
gun, and saw him coming with it
on his shoulder.



Date	Time	At.	Dr	Read	Bar.	fut
June 22	8. A.	69	69	7785 296	7489	
" "	1. P.M	82	81	7785 303	7482	
" "	6. P.M	79	78	7779 309	7470	
" 24	6. P	86	86	7728 366	7362	73.72 7362 10

Baptiste
~~[illegible]~~
Beauchemin } ~~voyageurs~~ good road

~~Thomas~~ Provancalle (~~Engaged good road~~)

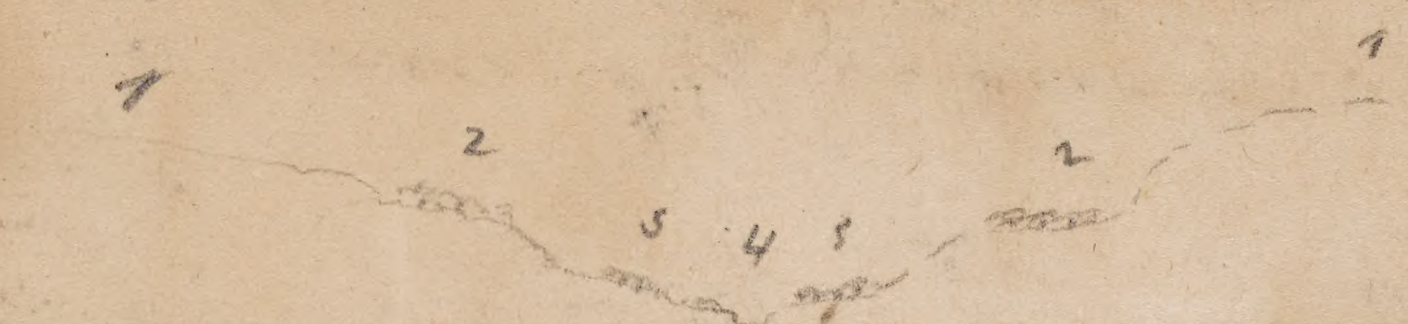
~~Pierre Crevier~~

Names of the voyageurs

Macy { Baptiste
Baptiste Beauchemin (good road)

[illegible] { Thos. Provancalle
Pierre crevier

No. 96. Repah - Richakse hills



valley of the Blue Earth River
as cut in the drift

No. 1. Prairie common elevation of the County. from 1. to 1. about one mile and about 150 feet above the level of the River. No. 2. 2. lower table land. about 70 feet above the river sometimes Prairie & sometimes woodland. No 3. 3. low bottom in the bends sloping down to the Edge of the water - almost always timbered. No. 4. Present bed of the river. which is very serpentine in its course, so that it is continually cutting through to No 3. and often to No 2 sometimes to to No 1.

I pity the man whose soul could remain unmoved
amid such a scene as this

Books I wish to purchase

Murchisons Silurian System

Dana's Mineralogy

Halls Palæontology price 6$

Struthiopteris germanica

I think this is one of the tall ferns seen in F. Ravine

2 & 3 Terebratula lammellosa (L'eveille)

4 Productus semireticulatus

24
3
27

8 - Murchisonia

1 Still water

mountain avens (the little fours)

Osmonda interrupta

at Little Falls fort Snelling

Pleurotomaria umbilicata

P. subconica

modiolopsis —

several sp. Leptaena

undesc'd sp. Orthis

Calc Tufa

Helix multilineata

left at Still water

1. Trunk
1. hat
1. umbrella
1. small box

marked F. B. Meek

in Pond

Reed grass Arundo coarctata